REMARKS/ARGUMENTS

Claims 1, 8, 13, 17, 21, 25-29 and 45-52 are pending in the captioned application. Applicants have amended claims 1 and 45 to further clarify the claimed invention. Dependent claims are also amended accordingly. Applicants respectfully request reconsideration in view of the amendments and the following arguments.

The claims 1, 8, 13, 17, 21 and 25-29 are again rejected under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Cooper et al., Niemeyer et al., and Nikiforov et al. Applicants respectively disagree.

The Examiner argues that Nikiforov teaches biotinylated oligonucleotide immobilization using a mixture that includes cationic detergents. In view of Cooper and Niemeyer, who teach immobilization of biotinylated oligonucleotides in salt solutions onto a hydrogel surface, the Examiner states that it would be reasonable to use cationic detergents of Nikiforov in Cooper or Niemeyer.

Applicants respectfully disagree. Applicants agree that Nikiforov shows examples of immobilization of biotinylated oligonucleotides. However, Nikiforov teaches immobilizing oligonucleotides to polystyrene or glass solid supports, not a hydrogel surface. Claim 1 of the current application immobilizes oligonucleotides onto negatively charged hydrogel. Applicants submit that Nikiforov does not address the problem of immobilizing a negative reagent (i.e., the oligonucleotide) on a negative surface. The surface in Nikiforov is glass or polystyrene, i.e. not a surface provided with a negative hydrogel (e.g., CM-hydrogel) or any hydrogel at all. Further,

Applicants cannot find any passage in Nikiforov to indicate that their surface is negative, although the Examiner states that Nikiforov uses a negative surface. Perhaps a glass or polystyrene surface can comprise "a negative charge", but they are not as negative as in the CM-surface in present invention. Therefore, the combination of Nikiforov with Cooper and Niemeyer does not lead to the novel method of the claimed invention.

The claims 45-52 are again rejected under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Pieken et al., Vary, and Nikiforov et al. Applicants respectively disagree.

Applicants submit that Pieken teaches an immobilization method using cycloaddition reactions, for immobilizing oligonucleotides onto dextran hydrogel coated sensor chip surface. The authors cited prior studies which suggest that certain salt were shown to improve the reaction rate.

Vary teaches covalent immobilization of eminoalkyl derivatives of oligonucleotides to a carboxylated solid phase surface, using stepwise method. The surface does not contain a hydrogel coating.

Nikiforov has been discussed extensively above. The deficiencies of Nikiforov discussed above apply here as well. Briefly, Nikiforov does not address the problem of immobilizing a negative reagent (i.e., the oligonucleotide) on a negative surface. The surface in Nikiforov is glass or polystyrene, i.e. not a surface provided with a negative hydrogel (e.g., CM-hydrogel) or any hydrogel at all. Further, Applicants cannot find any passage in Nikiforov to indicate that their surface is

negative. Perhaps a glass or polystyrene surface can comprise "a negative charge", but they are not as negative as in the CM-surface in present invention.

In contrast to the remarks made in Pieken, which is not supported by any experimental evidence, Applicants have shown that, in the claimed invention, the addition of even high concentrations of salt does not work, see Example 1. On the other hand, cationic detergents at concentrations where micelle or vesicles are formed surprisingly were the only efficient ways to achieve reasonable immobilization levels (examples 2-4). Thus, the combination of Pieken, Vary and Nikiforov does not render obvious the claims 45-52.

Applicants respectfully assert that the claims are in allowable form and earnestly solicit the allowance of the claims 1, 8, 13, 17, 21, 25-29 and 45-52.

Early and favorable consideration is respectfully requested.

Respectfully submitted,

GE Healthcare Bio-Sciences Corp.

By: /Yonggang Ji/
Yonggang Ji
Reg. No.: 53,073
Agent for Applicants

GE Healthcare Bio-Sciences Corp.
Patent Department
101 Carnegie Center
Princeton, New Jersey 08540

Tel: (609) 514-6371
Fax: (609) 514-6572

I hereby certify that this correspondence is being uploaded to the United States Patent and Trademark Office using the Electronic Filing System on April 19, 2010.

Signature: /Melissa Leck/

Name: Melissa Leck